CLAIMS

What is claimed is:

1. A method of authenticating a network device, comprising the computer-implemented steps of:

determining that a network link that uses a primary signaling technology and a secondary signaling technology is coupled to the network device;

obtaining, using the secondary signaling technology, a unique link identifier that is associated with the network link using the secondary signaling technology;

establishing the unique link identifier as a unique device identifier; and

authenticating the network device to a service provider by communicating the unique device identifier to the service provider over the network link using the primary signaling technology.

2. A method as recited in Claim 1, further comprising the steps of receiving a configuration from the service provider over the network link using the primary signaling technology.

3. A method as recited in Claim 1, wherein the secondary signaling technology is integrated services digital network (ISDN) signaling.

4. A method as recited in Claim 1, wherein the secondary signaling technology is ISDN, and wherein the unique link identifier is a telephone number associated with an ISDN line coupled to the network device.

5. A method as recited in Claim 1, wherein the secondary signaling technology is ISDN, and wherein the obtaining step comprises obtaining a telephone number associated with an ISDN line coupled to the network device using a caller ID function.

6. A method as recited in Claim 1, wherein the network device is a residential broadband router, wherein the primary signaling technology is asynchronous digital subscriber line (ADSL), and wherein the secondary signaling technology is ISDN.

7. A method as recited in Claim 1, wherein the network device is a residential broadband router, wherein the primary signaling technology is ADSL, wherein the secondary signaling technology is ISDN, and wherein the unique link identifier is a telephone number associated with an ISDN line.

8. A method as recited in Claim 7, wherein the step of registering the network device with a service provider comprises using the ADSL line to connect to a Cisco Intelligent Engine 2100 (IE2100) device associated with the service provider, and providing the unique device identifier to the IE2100.

9. A method as recited in Claim 1, wherein the step of registering the network device with a service provider comprises using the primary signaling technology to connect to a configuration server associated with the service provider, and providing the unique device identifier to the configuration server.

10. A method of authenticating a broadband customer premises network device that is communicatively coupled to an ISDN line that supports ADSL over ISDN, the method comprising the computer-implemented steps of:

obtaining, using the ISDN line, an ISDN telephone number uniquely associated with the ISDN line;

establishing the ISDN telephone number as a unique identifier of the broadband customer premises network device; and

authenticating the network device to a broadband network service provider by providing the unique identifier to the service provider using ADSL communication over the ISDN line.

11. A method as recited in Claim 10, further comprising the steps of receiving a configuration from the service provider.

12. A method as recited in Claim 10, wherein the obtaining step comprises obtaining a telephone number associated with the ISDN line using a caller ID function.

13. A method as recited in Claim 10, wherein the step of registering the network device with the service provider comprises using ADSL over ISDN to connect to a Cisco Intelligent Engine 2100 (IE2100) device associated with the service provider, and providing the unique device identifier to the IE2100.

14. A method of deploying a network device, comprising the steps of:

receiving a customer premises equipment (CPE) device at a customer premises;

coupling a network link that supports a primary signaling technology and a secondary signaling technology to the network device;

obtaining, using the secondary signaling technology, a unique link identifier associated with the network link;

establishing the unique link identifier as a unique identifier of the CPE device;

connecting to a network service provider using the primary signaling technology;

authenticating the CPE device to a service provider by providing the unique device identifier over the network link using the primary signaling technology; and

receiving, from the service provider, a configuration for the CPE device over the network link.

15. A computer-readable medium carrying one or more sequences of instructions for authenticating a network device, which instructions, when executed by one or more processors, cause the one or more processors to carry out the steps of:

determining that a network link that uses a primary signaling technology and a secondary signaling technology is coupled to the network device;

obtaining, using the secondary signaling technology, a unique link identifier that is associated with the network link using the secondary signaling technology;

establishing the unique link identifier as a unique device identifier; and

authenticating the network device to a service provider by communicating the unique device identifier to the service provider over the network link using the primary signaling technology.

16. A computer-readable medium as recited in Claim 15, further comprising the steps of receiving a configuration from the service provider.

17. A computer-readable medium as recited in Claim 15, wherein the secondary signaling technology is ISDN.

18. A computer-readable medium as recited in Claim 15, wherein the secondary signaling technology is ISDN, and wherein the unique link identifier associated with the secondary telecommunication link is a telephone number associated with an ISDN line.

19. A computer-readable medium as recited in Claim 15, wherein the secondary signaling technology is ISDN, and wherein the obtaining step comprises obtaining a telephone number associated with an ISDN line using a caller ID function.

20. A computer-readable medium as recited in Claim 15, wherein the network device is a residential broadband router, and wherein the primary signaling technology is ADSL.

21. A computer-readable medium as recited in Claim 15, wherein the network device is a residential broadband router, wherein the primary signaling technology is ADSL, wherein the secondary signaling technology is ISDN, and wherein the unique link identifier associated with the secondary telecommunication link is a telephone number associated with an ISDN line.

22. A computer-readable medium as recited in Claim 21, wherein the step of registering the network device with a service provider comprises using ADSL to connect to a Cisco Intelligent Engine 2100 (IE2100) device associated with the service provider, and providing the unique device identifier to the IE2100.

23. A computer-readable medium as recited in Claim 15, wherein the step of registering the network device with a service provider comprises using the primary signaling technology to connect to a configuration server associated with the service provider, and providing the unique device identifier to the configuration server.

24. An apparatus for configuring a network device, comprising:
means for determining that a network link that uses a primary signaling technology and a secondary signaling technology is coupled to the network device;
means for obtaining, using the secondary signaling technology, a unique link identifier that is associated with the network link using the secondary signaling technology;
means for establishing the unique link identifier as a unique device identifier; and
means for authenticating the network device to a service provider by communicating the unique device identifier to the service provider over the network link using the primary signaling technology.

25. An apparatus as recited in Claim 24, further comprising:
means for receiving a configuration from the service provider over the primary network link; and
means for initiating in-service operation.

26. An apparatus as recited in Claim 24, wherein the secondary signaling technology is ISDN.

27. An apparatus as recited in Claim 24, wherein the secondary signaling technology is ISDN, and wherein the unique link identifier associated with the secondary signaling technology is a telephone number associated with an ISDN line.

28. An apparatus as recited in Claim 24, wherein the secondary signaling technology is ISDN, and wherein the obtaining means comprises means for obtaining a telephone number associated with the ISDN line using a caller ID function.

29. An apparatus as recited in Claim 24, wherein the network device is a residential broadband router, and wherein the primary signaling technology is ADSL.

30. An apparatus as recited in Claim 24, wherein the network device is a residential broadband router, wherein the primary signaling technology is ADSL, wherein the secondary signaling technology is ISDN, and wherein the unique link identifier associated with the secondary signaling technology is a telephone number associated with an ISDN line.

31. An apparatus as recited in Claim 30, wherein the step of registering the network device with a service provider comprises using ADSL to connect to a Cisco Intelligent Engine 2100 (IE2100) device associated with the service provider, and providing the unique device identifier to the IE2100.

32. An apparatus as recited in Claim 24, wherein the registering means comprises means for using the primary signaling technology to connect to a configuration server associated with the service provider, and for providing the unique device identifier to the configuration server.

33. An apparatus for configuring a network device, comprising:
a network interface that is coupled to the data network for receiving one or more packet flows therefrom;

a processor;

one or more stored sequences of instructions which, when executed by the processor, cause the processor to carry out the steps of:

determining that a network link that uses a primary signaling technology and a secondary signaling technology is coupled to the network device;

obtaining, using the secondary signaling technology, a unique link identifier that is associated with the network link using the secondary signaling technology;

establishing the unique link identifier as a unique device identifier; and

authenticating the network device to a service provider by communicating the unique device identifier to the service provider over the network link using the primary signaling technology.

34. An apparatus as recited in Claim 33, further comprising the steps of receiving a configuration from the service provider.

35. An apparatus as recited in Claim 33, wherein the secondary signaling technology is ISDN.

36. An apparatus as recited in Claim 33, wherein the secondary signaling technology is ISDN, and wherein the unique link identifier associated with the secondary signaling technology is a telephone number associated with an ISDN line.

37. An apparatus as recited in Claim 33, wherein the secondary signaling technology is ISDN, and wherein the obtaining step comprises obtaining a telephone number associated with an ISDN line using a caller ID function.

38. An apparatus as recited in Claim 33, wherein the network device is a residential broadband router, and wherein the primary signaling technology is ADSL.

39. An apparatus as recited in Claim 33, wherein the network device is a residential broadband router, wherein the primary signaling technology is ADSL, wherein the secondary signaling technology is ISDN, and wherein the unique link identifier associated with the secondary signaling technology is a telephone number associated with an ISDN line.

40. An apparatus as recited in Claim 7, wherein the step of registering the network device with a service provider comprises using the ADSL line to connect to a Cisco Intelligent Engine 2100 (IE2100) device associated with the service provider, and providing the unique device identifier to the IE2100.

41. An apparatus as recited in Claim 33, wherein the step of registering the network device with a service provider comprises using the primary signaling technology to connect to a configuration server associated with the service provider, and providing the unique device identifier to the configuration server.